

Fully Automatic Grinder/Polisher

DGP8761

Higher throughput grinder polisher for 300 mm wafers

Realizes improvements in process stability and higher throughput

The DGP8761 is the successor to the DGP8760, which is used by premier manufacturers worldwide. It integrates backside grinding and stress relief processing and performs stable thin grinding to thicknesses less than 25 µm. The DGP8761 is equipped with a newly developed spindle to support high-speed grinding. This contributes to a shorter thin wafer processing time (compared to the DGP8760). In addition, an optimized handling layout shortens the cycle time (not including processing time).



Various Z3 spindle configurations

The following Z3 spindle configurations for thin wafer processing can be selected:

Stress relief

- Dry polishing - an environmentally friendly process without chemicals or water
- CMP (optional)

Super fine grinding (optional)

- Poligrind
- UltraPoligrind

Realizing configurations which provide a gettering effect on the Z3-axis

Gettering DP

This is a solution which realizes high die strength and maintains the gettering effect by using DISCO's unique dry polishing.

* Gettering: a process which forms a minute destructive layer (gettering sites) inside the silicon wafer. Impurities, such as heavy metals, present in the wafer are captured at these gettering sites.

Grinding wheel "UltraPoligrind"

The newly developed UltraPoligrind wheel, which uses micro-abrasives, can process thin wafers without chemicals. The wheel can achieve high wafer strength which cannot be obtained with traditional grinding wheels, while maintaining the grinding gettering effect (Extrinsic Gettering).

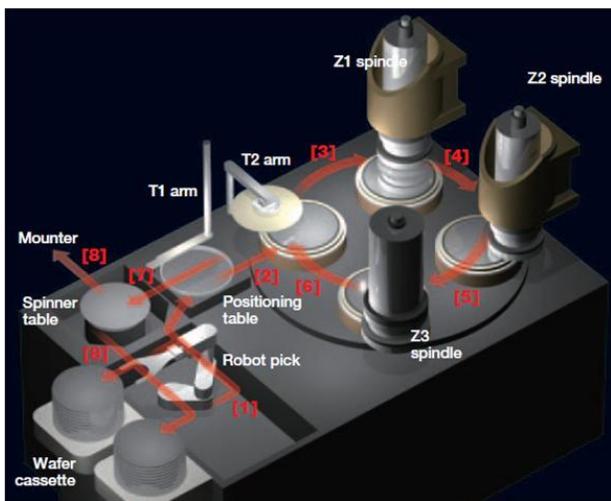
System expandability

By integrating the DGP8761 with a multi-wafer mounter, DFM2800, it is possible to support the attachment of DAF (Die Attach Film) for thin wafers. It can also be used in an inline configuration with DISCO's DBG (Dicing Before Grinding) process.



DISCO 8000 Series compatibility

The DGP8761 is compatible with grinding wheels, polishing wheels, dresser boards and other parts designed for existing DISCO 8000 Series equipment. In addition, the operation method and GUI (Graphical User Interface) are based on proven 8000 Series technology.



DGP8761 Operation flow

- [1] The robot pick removes a wafer from the cassette and places it on the positioning table, where centering takes place.
- [2] The T1 arm places the wafer on the chuck table.
- [3] The wafer proceeds to Z1 for rough grinding.
- [4] The wafer proceeds to Z2 for fine grinding.
- [5] The wafer proceeds to Z3 for dry polishing (or ultra high-mesh wheel grinding).
- [6] [7] The T2 arm removes the wafer from the chuck table and places it on the spinner table, where cleaning and drying take place.
- [8] Transfer to the mounter (DFM2700, DFM2800) or the robot pick returns the workpiece to the cassette.

Specifications

Specification		Unit		
Wafer Diameter	mm	φ 300 (φ 200/φ 300)		
Grinding Method (Z1 / Z2 axis)	-	In-feed grinding with wafer rotation		
Grinding Method (Z3 axis)	-	Anomalous in-feed grinding with wafer rotation		
Grinding Wheels	-	φ 300 Diamond wheel (grinding-axis) φ 450 Dry polishing pad (DP-axis) φ 450 CMP pad (CMP-axis)		
Grinding Accuracy	BG	Thickness variation within one wafer	μm	φ 300mm, Less than 2.5 (grinding + DP 2μm removal) Less than 2.5 (Z1-Z2-axis grinding only)
		Thickness variation between wafers	μm	φ 300mm, Less than ±2.5 (grinding + DP 2μm removal) Less than ±2.5 (Z1-Z2-axes grinding only) Note: When NCG is used: less than ±1.5
		Finished surface roughness	μm	300mm, Ra is less than 0.005 (grinding + DP 2μm removal) For Z1-Z2-axes grinding only, Ry is about 0.13 (for # 2000 finishing)
Machine dimensions (WxDxH)	mm	1,690 × 3,315 × 1,800		
Machine weight	kg	Approx. 6,700(DP·Poligrind) Approx. 6,900 (CMP)		

Environmental conditions

- * Use clean, oil-free air at a dew point of -15 °C or less. (Use a residual oil: 0.1 ppm. Filtration rating: 0.01 μm/99.5 % or more).
- * Keep room temperature fluctuations within ±1 °C of the set value. (Set value should be between 20 - 25 °C).
- * Use grinding water and cleaning water at room temperature +0 - 2 °C (fluctuation range: within 2 °C in one hour). For cooling water, use water controlled at 1 °C in relation to the grinding water.
- * The machines should be used in an environment, free from external vibration. Do not install machine near a ventilation opening, heat generation equipment or oil mist generating parts.
- * This machine uses water. In case of water leakage, please install the machine on the floor with sufficient waterproofing and drainage treatments.
- * All pressures specified above are gauge pressures.
- * As the above specification may change due to technical modifications .Please confirm when placing your order.
- * For further information, please contact your local sales representative.